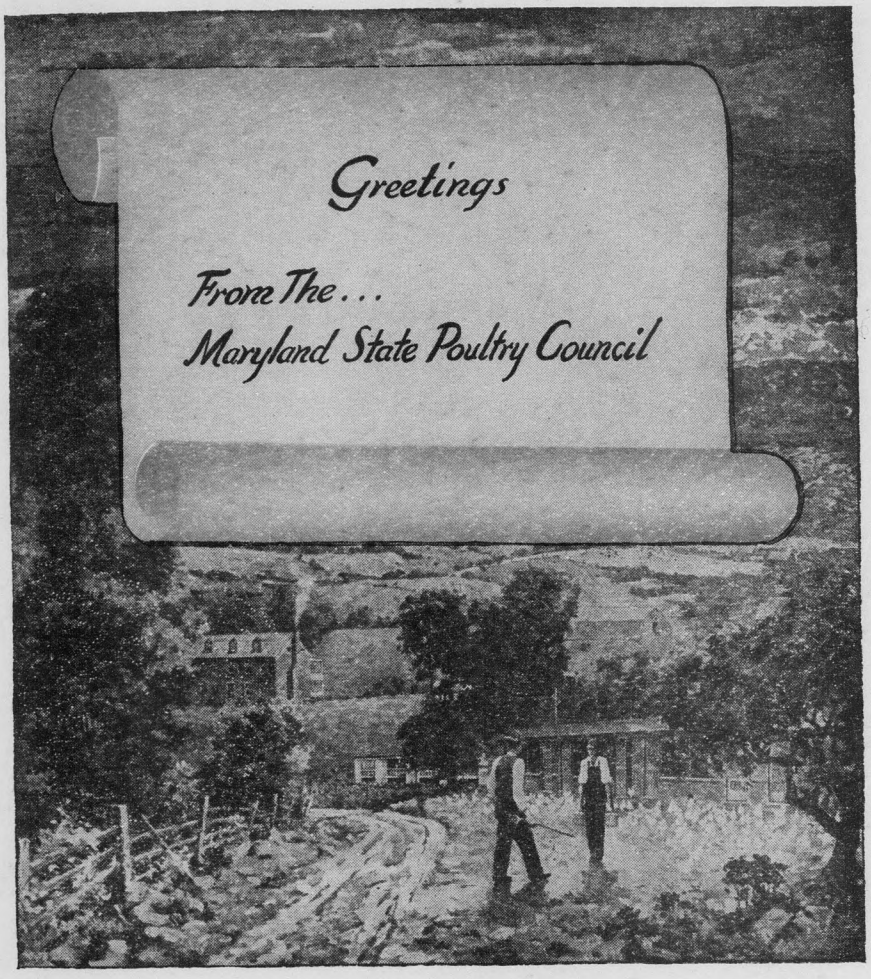
THE 1945 MARYLAND POULTRY YEARBOOK



When peace returns, the production of eggs and poultry meat will continue to be the second most important agriculture enterprise in Maryland.

The poultry industry provides Maryland farmers with over one-fifth of their total farm income.

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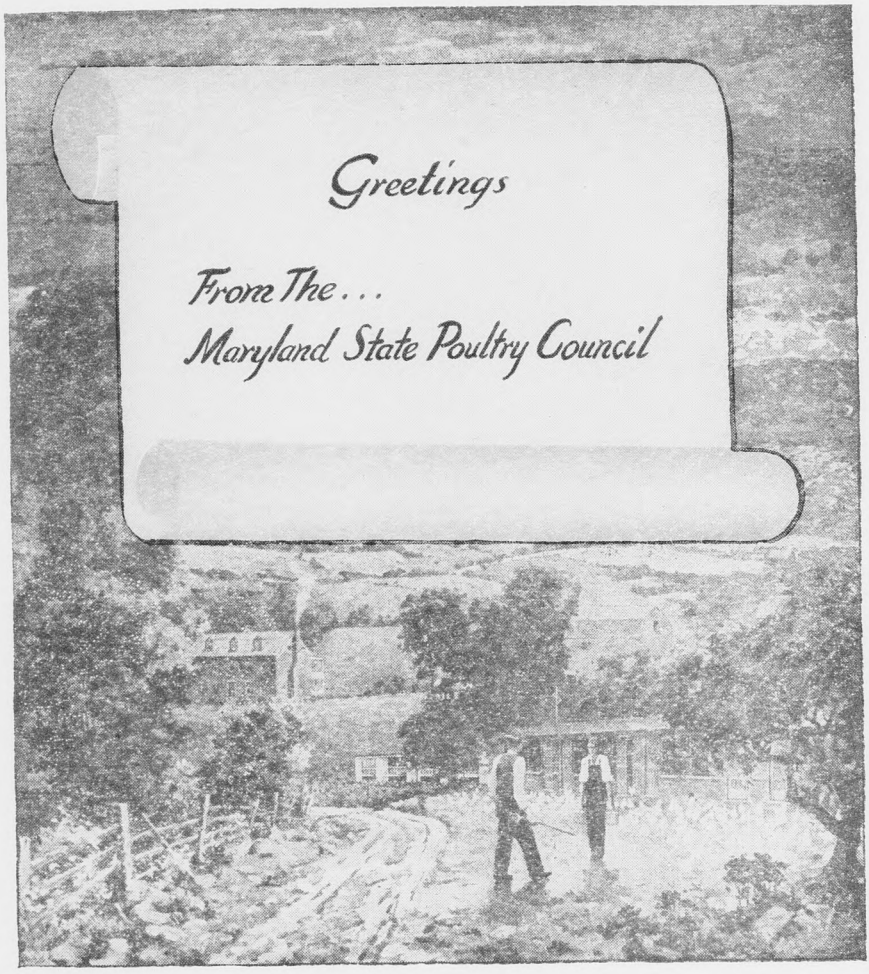

When peace returns, the production of eggs and poultry meat will continue to be the second most important agriculture enterprise in Maryland.

The poultry industry provides Maryland farmers with over one-fifth of their total farm income.

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THE 1945

MARYLAND POULTRY

YEARBOOK

Published by

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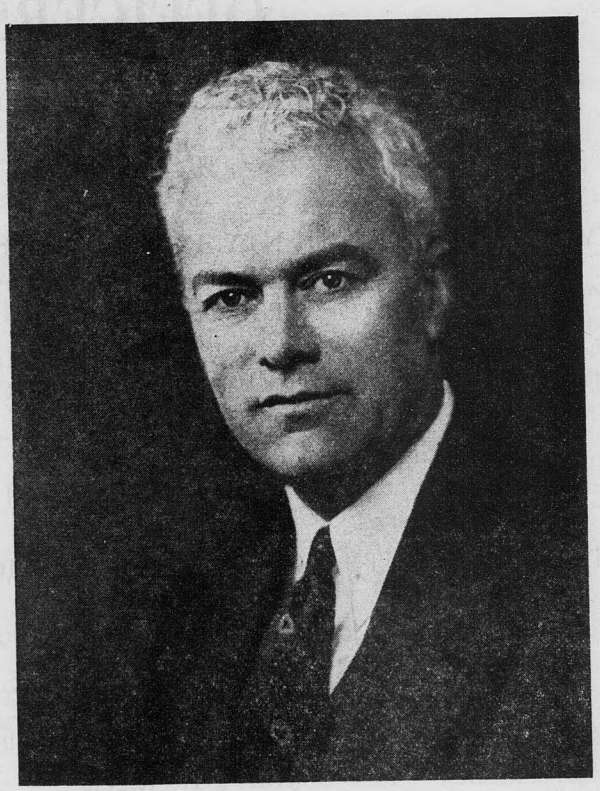
Greetings

to the

Poultry People

of

Maryland



It must be gratifying to poultry producers of Maryland to know that the poultry industry was the leading branch of agriculture in the state in contributing toward the total farm income in 1943.

Poulry producers have done a remarkable job during the past year, in spite of high feed prices, shortage of help, and other difficulties. I marvel at your accomplishments.

Poultry producers, however, should not become complacent and self-satisfied because there is still much to improve conditions in the industry. In the post-war period you will have to meet greater competition than ever in producing quality products. The University is anxious to help in every way it can. I hope that 1945 will be one of the most profitable years poultry producers have ever had.

H. C. BYRD

President, University of Maryland

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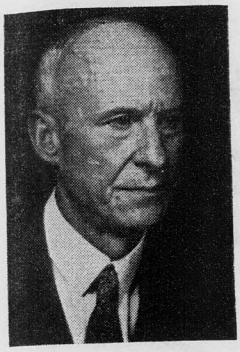
TO MARYLAND POULTRY PRODUCERS



Maryland poultry producers are to be congratulated for their achievement in increased output of both eggs and poultry meat during the war emergency. Hens and pullets kept for egg production have been increasing and, on January 1, 1944, reached an alltime high of 3,998,000 head. The broiler industry has expanded from a production of less than 2,000,000 broilers in 1934 to 21,000,000 in 1943. The lack of feed, in general, the extreme shortage of animal protein feeds and certain restrictions in the way of priorities resulted in some curtailment of broiler production in 1944.

While the production of eggs and poultry, other than broilers, has expanded during the last year, prices of both eggs and poultry have been in a less favorable position in 1944 than for the corresponding months of 1943. In September, 1944, one dozen of eggs would buy only 15.0 pounds of feed and one pound of chicken would buy 10.6 pounds of feed, as contrasted with 19.3 pounds of feed and 11.7 pounds of feed in September, 1943, respectively.

The poultry industry is one that can be expanded rather quickly in response to high support and ceiling prices. Under the Price Stabilization Act of 1942, poultry and egg prices have been supported at not less than 90 per cent of the parity or comparable price. Also, the Steagall Amendment extended the price floors for poultry and eggs for two calendar years after the war at not less than 90 per cent of parity. As a result of the high artificial prices, the poultry industry has been greatly over-expanded and the Government has had to buy large quantities of eggs which it was unable to store and dispose of properly.

It is the general feeling among poultry producers and others that continued support of egg and poultry prices at such high levels will lead to a further over-expansion in production, whereas what is needed is a material reduction in the number of layers. Because a sudden removal of all support prices might lead to certain serious disruptions in the trade, is is felt that support prices should be gradually decreased or tapered off. Probably, the first year, prices might be supported at 75 per cent of parity; the second year, at 60 per cent; the third year, at 40 per cent; and than eliminated entirely. The poultry industry should be relieved of all Government price controls as soon as practicable.

S. H. DeVAULT

Head, Department of Agricultural Economics and Marketing

University of Maryland

Let Super Greens Pellets Help You Combat Hatching Losses and Produce Sturdy, Rugged Chicks

PLAN NOW FOR HIGH HATCHES and strong, livable chicks in 1945 by feeding your breeders Ful-O-Pep Super Greens Pellets as a supplement to the regular mash. Yes, Ful-O-Pep Super Greens Pellets are packed with Vitamin-rich sources such as Concentrated Spring Range,* Nature's Richest Vitamin Combination to help breeders produce big, husky chicks with deep yellow-colored shanks. These vitamin-rich pellets help you hatch a high percentage of hatching eggs and help your laying flock gain stamina and resistance to colds. They increase feed consumption and help maintain high egg production.

TO FORTIFY BREEDER BIRDS with a high vitamin intake, to get good hatching eggs, to produce sturdy, livable chicks, to help keep breeders healthy, supplement your regular feed with Ful-O-Pep Super Greens Pellets.

REMEMBER, hens take to these pellets readily, so you don't have to disturb your present feeding plan. All you do is sprinkle a few Ful-O-Pep Super Greens Pellets on top of your present mash according to directions. For details write

*Reg. U. S. Pat. Off.

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MARYLAND STATE EGG SIZING LAW

Maryland poultry producers feel the need of new egg legislation to curb the misleading practices now evident in our markets regarding the proper classifying of eggs as to size. The importance of this legislation cannot be overemphasized. Marketing eggs by grade and size is just good business policy. All eggs should be bought and sold on a grade and size basis.

With the passage of fresh egg laws in the Northeast, requiring the grade and in most instances the size to be plainly and conspiciously marked in connection with the sale of eggs, it is now possible for consumers to purchase the particular grade and size of eggs desired. Egg sizing legislation and egg quality legislation go along hand in hand. An egg sizing law in my opinion will place eggs in their proper price classification which not only benefits the producer but is a benefit to all concerned. The producer receives the price he is entitled to, the store-keeper receives the benefit of increased sales by giving greater satisfaction, and the consumer rightfully gets what he or she is paying for.

Retail distributors and retailers have made marked advancements in recent years in the handling of eggs. Perhaps the most important change is that of selling eggs in cartons. It is therefore of great importance to the purchaser in buying eggs in a closed container that the carton be marked intelligently as to its contents. Requiring the marking of eggs according to a size classification reduces much misunderstanding, prohibits misleading advertizing, and eliminates unfair competition.

Buying and selling eggs by size is an aid in merchandizing. Prices received for eggs so graded have consistently topped the city markets and is proof that the average consumer is willing to pay for a well graded product. New customers are obtained by making a special effort to sell graded products properly labeled, while customers may be lost by selling eggs ungraded or under misleading terminology. The law boils down to "truth in advertising." The person doing a good job at sizing need not fear the law. Only those persons representing eggs as one size when they are another size, thereby, creating unfair competition, need to feel corrective measures. Sizing of all eggs is an aid in publicizing correct egg quotations thereby promoting better grading and procuring greater returns.

The Maryland State Poultry Council is to be complimented on sponsoring such worthwhile and timely egg legislation.

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For a Complete

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DRIED SKIM MILK
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Write, Phone or Wire for Unusually Attractive Prices

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REQUIREMENTS FOR A SUCCESSFUL COOPERATIVE POULTRY DRESSING PLANT

Before organizing cooperative associations to process and to market their poultry, the poultrymen of Maryland should, first of all, give careful consideration to the need for such associations. Unless there is an actual need, as evidenced by unsatisfactory or inadequate outlets or services or by the failure of present market outlets to take steps to encourage the consumption of Maryland poultry, the setting up of cooperative associations may be inadvisable.

The fact that at least four groups of poultrymen on the Eastern Shore are now planning such cooperative associations indicates their feeling that there is a real need for more satisfactory market outlets for their broilers and other poultry.

Apparently these groups anticipate increasing difficulties in the post-war years both in marketing their poultry and in obtaining satisfactory prices. They are, therefore, giving consideration to the establishment of their own plants and to carrying their products in processed form closer to the consumers. They are no longer willing to take whatever price may be offered them as producers and to have no participation in the margins which accompany the processing and marketing functions.

If Maryland producers organize cooperative associations, they should insure their successful operation by benefiting from the experiences of others in the field. Several requirements necessary for success, besides the need for an association, are touched upon briefly here.

It is important that the legal set-up of the association comply with State and Federal statutes which apply to farmers' cooperatives. Certain benefits and privileges accompany this compliance.

Adequate volume of product to insure efficient, low-cost operation and to meet customer requirements is essential. Producer marketing agreements are the best assurance of adequate and dependable volume during the first years of operation.

Along with sufficient and positive volume should go a suitable well-equipped dressing plant. Unit poultry handling margins are often small; efficient plant operation is, therefore, essential.

The success of a cooperative association depends finally and to a large degree upon the management. This means it needs not only a capable, alert, aggressive, and progressive manager, but also a governing board of directors aware of its responsibilities and of its opportunities to give leadership and guidance to the business enterprise.

Selling and merchandising to the best advantage is the most difficult and important job of a marketing cooperative. Small individual associations are unlikely to be able to sell as advantageously as a joint or federated sales agency set up by a number of associations to do their selling in the terminal markets.

JOHN J. SCANLAN
In Charge Poultry Section
Cooperative Research and Service Division
U. S. Department of Agriculture

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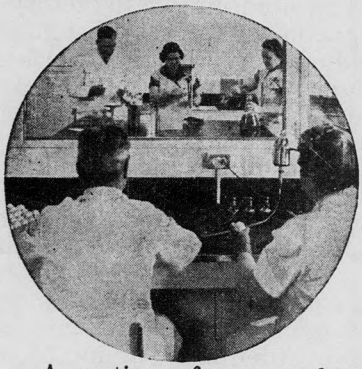

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Russell's Bacterins: Avian Mixed: (Chicken Formula): Cholera: Cholera Typhoid: Typhoid Paratyphoid

125 doses 1—125 c.c. bottle	$ 1.65
250 doses 1—250 c.c. bottle	3.00
1000 doses 4—250 c.c. bottles	10.00

Avian Mixed Bacterin (Turkey Formula)

60 doses 2—60 c.c. bottles	$ 1.60
125 doses 1—250 c.c. bottle	3.00
500 doses 4—250 c.c. bottles	10.00

Fowl Pox Vaccine—Chicken Strain and Pigeon Strain

1—100 dose package	$ .75
10—100 dose packages	7.00
1—500 dose package	3.25
2—500 dose packages	6.00

Laryngotracheitis Vaccine

1—100 dose package	$ 2.50
1—500 dose package	10.00
2—500 dose packages	18.50

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KANSAS CITY, MISSOURI

POULTRY INDUSTRY FIRST IN GROSS INCOME OBTAINED BY MARYLAND FARMERS IN 1943

There are over 35,000 farmers in Maryland engaged in the poultry business. On the great majority of these farms, poultry raising and egg production supplement other farm operations. At the same time, on about 10,000 farms the laying flock contains 100 birds or more There are oved 1,000 commercial flocks in the state, over 600 farms on which 100 or more turkeys are raised each year, and several hundred farms on which broilers and fryers are produced commercially.

There are about 4,000 farms which obtain their major source of income from poultry and poultry products.

The following figures give the gross income obtained by Maryland farmers in 1943 from several of the more important branches of agriculture. The gross income given for poultry does not include the income from urban flocks, nor from ducks, geese, and guineas.

Poultry	$44,314,000
Dairy products	37,428,000
Truck Crops	21,642,000
Hogs	12,330,000
Fruits	9,348,000
Cattle and calves	7,902,000
Wheat	4,997,000
Corn	2,029,000

The poultry income was obtained from the following sources:

Broilers	$19,018,000
Market Eggs	13,567,000
Farm Chickens	9,518,000
Turkeys	2,211,000

Big Increase in Maryland Hatchery Industry From 1938 to 1943

In 1938 Maryland had 137 hatcheries with a hatching-egg capacity of 5,038,000 eggs and these hatcheries produced 15,212,000 chicks. In 1943 there were 123 hatcheries with 9,532,000 egg capacity and 49, 609, 000 chick were produced. This represents an enormous expansion of the hatchery industry in a relatively short time.

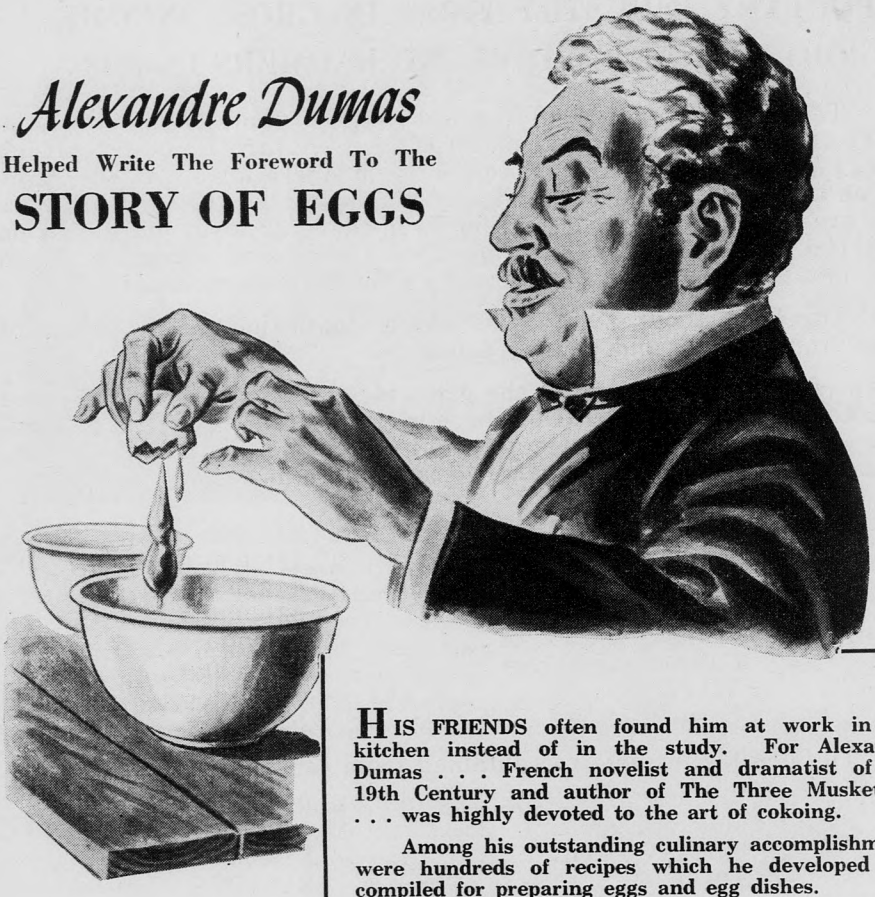
BLOOD CLOTS AND "MEAT" SPOTS

So called "meat" spots in eggs are not composed of meat or connective tissue but are simply blood clots that have undergone certain changes. Research by A. V. Nalbandov and L. E. Card of the Illinois Experiment Station has shown that blood clots decrease in number and size as soon as layers are turned out on range. Under confinement, blood clots increase from December to July. The tendency to lay eggs containing blood clots is inherited, so that flock owners who produce hatching eggs should candle their eggs and remove those with blood clots, just the same as market egg producers are obliged to do at certain seasons of the year.

Alexandre Dumas

Helped Write The Foreword To The

STORY OF EGGS



HIS FRIENDS often found him at work in the kitchen instead of in the study. For Alexandre Dumas . . . French novelist and dramatist of the 19th Century and author of The Three Musketeers . . . was highly devoted to the art of cokoing.

Among his outstanding culinary accomplishments were hundreds of recipes which he developed and compiled for preparing eggs and egg dishes.

Dumas' extraordinary interest in eggs clearly shows that he did not underestimate their value as a food product. In fact . . . he proved their versatility and flavor in hundreds of different ways! Thus he paid tribute to a fine food . . . and helped write the foreword to the modern story of eggs.

In addition to versatility and flavor . . . science today has proved that the story of eggs includes still another important quality — high nutritional value. And national, state and local egg and poultry groups, scientists, educators, Federal and State agencies, progressive retailers — all have helped to pass along the full facts to the public . . . thus furthering consumer appreciation of eggs throughout the country.

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MARYLAND POST-WAR POULTRY PROBLEMS

The Sub-Committee on Poultry summitted to the State Agricultural Post-War Committee the following suggestions concerning the need for more efficient production during the highly competitive post-war period and the great need for improvement in the average quality of poultry products.

1. Better Breeding — Since the selection and breeding work with chicken and turkey flocks carried on under the Maryland Poultry Improvement Plan is basic in developing more profitable flocks, emphasis should in the future be given to the breeding of fast-growing, rapid-feathering strains of chickens and turkeys that will utilize feed as efficiently as possible in producing meat. Also, Record of Performance breeders operating under the Plan should employ progeny-testing as extensively as possible in order to be able to supply hatchery and other flocks with stock that will produce each dozen eggs on the fewest possible pounds of feed.

2. Insulated Houses — The more widespread use of properly insulated houses, especially of the straw-loft type, should be greatly encouraged because a higher level of egg production can be obtained both winter and summer.

3. Artificial Lighting — More extensive use of artificial lighting should be made with: (1) pullet flocks to increase profits in fall and winter egg production; (2) yearling hens in the late summer to maintain fall production; (3) turkey breeding flocks in winter to stimulate early production of hatching eggs for use within the state and for the early hatching-egg market in northern states.

4. Disease Control — Since diseases take such a heavy toil of losses, every effort should be made through research and extension to develop better control methods, especially with respect to such diseases as coccidiosis, chick bronchitis, cholera, leucosis, pullorum, laryngotracheitis, and fowl typhoid. Poultry producers feel that a bulletin on controlling poultry diseases by the Livestock Sanitary Service would fill a great need.

5. Maryland Fresh Egg Law — More educational work is necessary among producers, to encourage them to produce eggs that will qualify under the provisions of the law, and among merchants, to encourage them to emphasize importance of quality to consumers. It is suggested that an informational center be established to advise producers of profitable outlets for high quality eggs and to advise merchants where they could secure quality eggs.

6. Farm Egg Coolers — The more extensive use of farm egg Coolers would greatly improve the average quality of Maryland eggs and increase hatchability of hatching eggs.

7. Egg Sizing Law — The Maryland State Poultry Council requests the passage by the State Legislature of an egg sizing law with a view toward improving egg marketing conditions in the state.

8. Increased Grading of Poultry Products — Selling market eggs and dressed chickens and turkeys on a graded basis should be developed extensively. It is particularly important that a more rigid system of grading broilers be adopted by dressing plant operators.

9. Better Market Quotations — The Maryland State Poultry Council urges the development of a greatly improved egg and poultry market reporting service, especially in Baltimore and the leading county papers. Quotations should be made on the basis of grades.

10. More Cooperative Marketing — Since the Westminster Cooperative Poultry Products Auction has performed such invaluable service to poultrymen in the community through increased returns from their flocks, thorough studies should be made to ascertain the possibility of establishing similar cooperative enterprises in other communities of the state.

11. Cooperative Turkey Dressing Plants — Studies should be undertaken to determine the feasibility of establishing cooperative turkey dressing plants in sections of the state where turkeys are grown in considerable numbers.

12. New Outlets for Poultry Products — Under the war stimulus of the increased food production program, the production of eggs and chicken meat in the state has increased tremendously and unless current per capita consumption of eggs and chicken meat can be maintained, the production of these products will necessarily have to be curtailed. Studies should be made, therefore, to determine the possibility of developing new uses for eggs and new outlets for chicken meat. Canning second-grade broilers in the dressing plants would serve to increase the reputation of the first-grade broilers sold as fresh-killed dressed birds and should help to stabilize conditions in the broiler industry.

Ten Years Changes in Maryland Hatchings

Custom hatching declined from 17 percent in 1934 to 4 percent in 1943.

Chicks hatched in incubators on farms decreased from 10 percent in 1934 to 2 percent in 1943.

Chicks hatched under hens declined from 38 percent in 1934 to 9 percent in 1943.

Back in 1934 only 35 percent of all chickens raised in Maryland were bought as baby chicks from hatcheries, whereas in 1943 the figure was 81 percent.

NEW HELP in Raising Poultry

The TWO-FOLD Drinking Water Medicine HELPS Flocks TWO-WAYS

1. **HELPS CONTROL Cecal COCCIDIOSIS in CHICKENS (in large doses)**
2. **PROVIDES TONIC BENEFITS (in small doses)**

Easy to use! Just drop these quick-dissolving tablets in the drinking water.

Safe for use in any waterer, even metal.

FOR BIRDS OF ALL AGES

Ren-O-Sal helps avoid many losses, brings new benefits. Against cecal (bloody) coccidiosis, use it with sanitation before trouble spreads. Treat the flock as soon as any bird shows symptoms. Use 8 tablets per gallon daily as needed, up to ten days, for truly remarkable results.

As a regular drinking water tonic, use two tablets per gallon as early and often as desired. Ren-O-Sal's tonic benefits will please you.

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Thoroughly tested at our research farm, and by thousands of poultry raisers. Pleased users say "there's nothing like it!" And no wonder. Only Ren-O-Sal contains the effective combination of ingredients, including "Salarson," which we developed after years of research.

Dr. Salsbury dealers everywhere now can provide poultry raisers with two-fold benefits of this new drinking water medicine. Progressive poultry raisers will want an ample supply of genuine Dr. Salsbury's Ren-O-Sal on hand, for regular tonic use and quick action the moment coccidiosis threatens. DR. SALSBURY'S LABORATORIES, Charles City, Iowa. A Nation-wide Poultry Service.

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PRODUCE MORE EGGS WITH LESS FEED

By MORLEY A. JULL, University of Maryland

Producing more eggs on less feed sounds paradoxical, but that is exactly what must be done from now on to enable egg producers to secure reasonable profits from their flocks.

A high level of egg production in every laying flock is more necessary than ever. The cost of feed represents over one-half of the total costs of producing eggs, including labor.

Using well bred cockerels from bred-to-lay strains for heading up hatchery flocks will help to raise the level of egg production in most flocks in Maryland. The pullets raised from the chicks purchased by farmers will lay better and produce eggs more economically. Feed is saved and profits are increased, as the accompanying illustrations show in a very effective way. Farmers and commercial egg producers simly cannot afford to buy poor quality chicks.

Since the cost of feed represents over one-half of the total costs of producing eggs, the number of pounds of feed consumed per dozen eggs produced is a factor of economic importance to every egg producer. Figure 1 shows in general that the higher the level of egg production, the fewer are the pounds of feed consumed per dozen eggs produced, the larger sized general-purpose breeds consuming relatively more feed for maintenance than Leghorns.

Figure 2 shows that the number of pounds of feed consumed per dozen eggs produced very greatly affects the net return secured per bird. In purchasing chicks from hatcheries, flockowners should make sure that the hatchery operator from whom they intend to purchase the chicks is carrying on a sound breeding program including the use of "bred-to-lay" cockerels produced by outstanding breeders who carry on a progeny-testing program. It should always be kept in mind that usually the more pounds of feed consumed per dozen eggs produced, the lower the net returns secured.

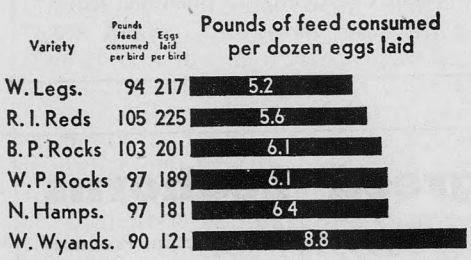
Variety
Pounds feed consumed per bird
Eggs laid per bird
Pounds of feed consumed per dozen eggs laid
W. Legs. 94 217 5.2
R. I. Reds 105 225 5.6
B. P. Rocks 103 201 6.1
W. P. Rocks 97 189 6.1
N. Hamps. 97 181 6.4
W. Wyands. 90 121 8.8

Fig. 1. The number of pounds of feed consumed per dozen eggs produced is determined largely by the number of eggs laid per bird, as shown by the results secured in recent New York and Michigan egg laying contests. (From Jull in Successful Poultry Management)

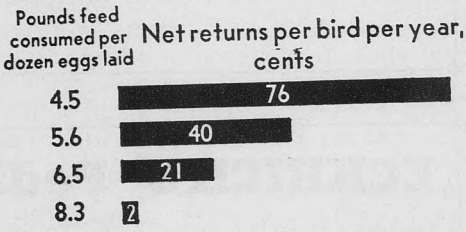

Fig. 2. The number of pounds of feed consumed per dozen eggs produced is of great importance in determining net returns in egg production, as shown by results secured from 276 Michigan farm flocks. (From data of K. T. Wright, Mich.)

—Cuts courtesy Poultry Tribune

FIERY'S - R. O. P. NEW HAMPSHIRES

ARE FIRED WITH

VIGOR - HATCHABILITY - EGG PRODUCTION - EGG SIZE and rigidly selected for fast feathering, growth and fleshing.

OUR NEW HAMPSHIRE MALES ARE ALL U.S.R.O.P.

BARRED CROSS CHICKS — R.O.P. and Certified N. H. Chicks

MD. - U.S. APPROVED PULLORUM PASSED HATCHERY

FIERY'S POULTRY FARM AND HATCHERY

Ringgold Road **Smithburg, Md.**

MARYLAND POULTRYMEN!

Maryland R.O.P. Poultry Breeders Association

members can supply you with

ACCLIMATED

EGGS CHICKS STOCK

from progeny tested breeders of outstanding egg and meat production qualities

You won't get better values elsewhere, nor acclimated stock any other place

All Flocks Pullorum Passed Or Clean

Records Under Supervision - Md. Poultry Imp. Board

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ECKRICH'S Pedigreed Leghorns

Maryland U.S.R.O.P. Pullorum Passed. Quality chicks of the Hanson strain. Produced from the finest Maryland R.O.P. Stock. Six Years careful breeding for superior egg production. Highest laying average of all Maryland R.O.P. breeders for past five years. We have a number of 300-egg hens in our matings of our own breeding.

CHICKS —— EGGS —— BREEDING STOCK

Phone 804F11 **R.F.D. No. 4** **Mt. Airy, Md.**

SECURING SUPERIOR QUALITY CHICKS FROM R.O.P. BREEDERS

Next year as never before you will want to buy baby chicks that are "bred-to-lay." Pullets that will lay eggs of good size on the fewest possible pounds of feed per dozen produced make the biggest profits, because the cost of feed represents about one-half of the total cost of producing eggs, including labor.

There are 7 Maryland Record of Performance (R.O.P.) breeders who are doing their best to produce the quality of chicks that will give satisfaction in the hands of those who buy them. They are breeding for high egg production by the progeny-test method and are concentrating the selection of their breeding stock each year from among families of full sisters that are daughters of sires and dams of proved breeding worth. The records made in 1942-43 by these Maryland R.O.P. breeders demonstrate the progress they are making in developing good laying strains.

Mr. H. Altenburg, Middle River, Md., secured an average egg production of 225 eggs for his White Leghorn pullets that qualified for R.O.P. Mr. S. Ahmuty, Odenton, Md., secured an average of 248 eggs for his New Hampshires that qualified. Mr. James Alexander, Essex, Md., secured an average of 229 eggs with his qualified White Leghorns. Ayrlawn Farms, Bethesda, Md., secured an average of 220 eggs for their White Leghorns that qualified and an average of 221 eggs for their Barred Plymouth Rocks that qualified. Mr. W. P. Eckrich, Mt. Airy, Md., with his White Leghorns that qualified secured an average of 254 eggs. Mr. J. F. Fiery, Smithburg, Md., with New Hampshires that qualified secured an average of 224 eggs. Mr. C. M. Snyder, Baltimore, Md. secured an average of 228 eggs with his White Leghorns.

These Maryland R. O. P. breeders are doing splendid breeding work to provide farmers and commercial poultrymen with chicks of superior quality.

ABILITY TO SURVIVE FULL LAYING YEAR HERITABLE

The ability of a given family line of poultry to survive a complete laying year has been demonstrated by D. R. Marble at Pennsylvania State College to have an hereditary basis. The evidence also shows that a low mortality breeding line may be exposed to disease by intermixing with a high mortality line without heavy loss from disease.

Total mortality of third generation birds selected for high and low mortality from the age of 6 weeks to 515 days was 41.7 percent in the high mortality line and 22.6 percent in the low mortality line. Mortality differences for the fourth generation birds now in laying houses also indicates comparable clear-cut differences. Differences in mortality between second and third generations were about the same.

NUMBERS OF CHICKENS RAISED ON FARMS 1940 TO 1944

The stimulus of the war effort induced Maryland farmers to raise more chickens, the numbers for the last five years being: 1940, 6,837,000; 1941, 7,521,000; 1942, 7,822,000; 1943, 9,465,000; 1944, 8,329,000.

AYRLAWN FARMS

Maryland's Oldest U. S. R. O. P. Breeder

Barred Plymouth Rocks ——— White Leghorns

We hatch nothing but certified and R.O.P. chicks

Maryland U.S.R.O.P. individual wing banded chicks and certified chicks from special flock matings.

Maryland U.S.R.O.P. Approved Cocherels

Special prices offered poultrymen in quantity lots

AYRLAWN FARMS

BETHESDA, MARYLAND

WASHINGTON TELEPHONE — WISCONSIN 4215

ALEXANDER'S R.O.P. LEGHORNS

Eggs from ALEXANDER'S FARM won first prize at the Maryland State Poultry Council Egg Show at the Lord Baltimore Hotel, and also first prize for the best dozen white eggs at the Harford County Fair.

Chicks from this pedigreed stock are from trap-nested dams, being headed by U.S. Certified R.O.P. males.

These chicks are from pullorum passed stock. They feather quickly and are good egg layers

Alexander Farm

Route 16 **Box 126** **Baltimore 21, Maryland**

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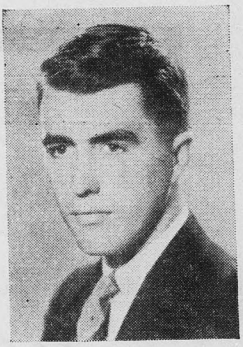


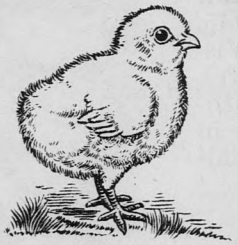
Dr. George M. Briggs joined the poultry staff of the University of Maryland on January 1, 1945. Dr. Briggs is a graduate of the University of Wisconsin, where he has done outstanding research on poultry nutrition especially vitamins and proteins. At the University of Maryland he will be in charge of poultry nutrition research. He is a valuable addition to the University staff.
Dr. George M. Briggs

MARYLAND NEEDS MORE CERTIFIED HATCHERIES

Most Maryland farmers are always hoping to secure better quality chicks than they purchased the year before. A Certified hatchery is a good source of chicks of superior quality. Before a hatchery can be recognized as a Certified hatchery, all of the flocks from which the hatchery secures its eggs must be selected carefully as to body type and individual quality and each flock must be mated to R.O.P. cockerels. Baby chicks purchased from a Certified hatchery thus have some of the good qualities of R.O.P. stock.

A hatchery operator can very readily have all of his hatchery flocks mated to R.O.P. cockerels by purchasing R.O.P. chicks from a R.O.P. breeder. At the time the R.O.P. chicks are purchased from the R.O.P. breeder, the R.O.P. breeder must send to the official state inspector a list of the pedigrees with wing-band numbers of the chicks purchased. In the fall of the year the cockerels that are to be used as R.O.P. cockerels in the hatchery flocks must be selected and banded by the official state inspector. The use of good R.O.P. cockerels in hatchery flocks should do much to improve the quality of chicks sold from the hatchery. Also, the female chicks secured from the R.O.P. breeder will do a lot to improve the laying ability and breeding worth of the hatchery flocks.

Most hatchery operators in Maryland should try to qualify for the Certified hatchery rating.



START'EM RIGHT and KEEP'EM RIGHT!

with Hilltop's K-M

K-M should be in the drinking water at all times from chick to chicken. It keeps the system toned up and helps build resistance to the many ills which can afflict poultry flocks. K-M the economical germicide, conditioner and diuretic is —the poultryman's Stand-by.

ASK ABOUT THESE STAR ITEMS in the Poultry Health field.

- MOR-EEN
- WOR-MOR
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- RESPO-MOR
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Ask to have our Representative call on you

Eastern Grain Growers

Hagerstown, Maryland

DISTRIBUTORS FOR

718 Wash'n Ave. No. Minneapolis Minn.

HILLTOP LABORATORIES
Aids to Poultry Health

MARYLAND TURKEY BREEDERS AND HATCHERIES SHOW PROGRESS UNDER IMPROVEMENT PROGRAM

By W. H. Rice

Progress in developing turkey breeding flocks of superior conformation, fleshing qualities, hatchability and lower mortality is evident in those flocks which have been in the Maryland Turkey Improvement Program for the past several years.

During this period pullorum infection has also been eliminated from these flocks through repeated testing by the Livestock Sanitary Service.

Among the Broad Breasted Bronze breeders making notable progress under this program through close selection of their breeding stock are: Mrs. H. T. Williams and Walter B. Harriss, Jr. of Worton; Miss Agnes Tilghman and Howard C. Taylor of Easton; L. H. Stewart of McDaniel; Edward M. Wilkins, Chestertown and E. Taylor Chewning, Nutwell (A.A. Co.). Hillside Turkey Farm, Thurmont has developed outstanding meat type White Hollands.

In addition to close selection, Mrs. A. W. Sattler of Monkton and H. L. Norman, Mechanicsville, are doing progeny testing through the use of individual tom matings and trapnests with their Broad-breasted Bronze.

Mrs. Sattler, Norman, Stewart and Hillside Farm also operate breeder hatcheries, selling poults from their own flocks only while other breeders named sell surplus eggs to well known turkey hatcheries.

Commercial hatcheries in the program while giving attention to selection of breeding birds are giving pullorum testing their principal attention. Among these are Whittington hatchery, Marion; Bramble Poultry Farm, Chestertown; West Sherwood Farm, St. Michaels; Beach's Hatchery, Rockville and Beck's Hatchery, Mt. Airy.

With poults at top demand to produce turkeys for domestic consumption as well as for shipment overseas to our fighting forces in recent years these hatcheries and especially breeder hatcheries have sold out their capacity in advance of the season.

With th government requesting Maryland producers to grow 20,000 more turkeys in 1945 over the estimated crop of 382, 000 bids in 1944, supplies of poults are expected to be below the demand in Maryland in 1945.

Purchases of poults would do well to place orders well in advance of the 1945 season to insure securing the numbers needed.

DU PONT BETTER THINGS FOR BETTER LIVING . . . *Through Chemistry*

"DELSTEROL"

A VITAL FEED INGREDIENT

for

GROWTH, HEALTH, AND EGG PRODUCTION

TODAY'S poultry feeding problems make it more important than ever to be sure the feed you buy is properly and adequately fortified with Vitamin D—a vital feed ingredient in the promotion of growth, health and egg production.

Leading feed manufacturers have found "Delsterol"—Du Pont's trade-marked name for its "D"-Activated Animal Sterol —an ideal source of this vital ingredient.

"Delsterol" is supplied to feed manufacturers in dry, edible powder form to facilitate accurate, thorough dispersion in mixing. It is chick-tested to assure uniform efficiency. The fact that it is made entirely of domestic raw materials means it is always available.

Further, "Delsterol" is highly concentrated and exceptionally stable. It does not congeal in cold weather, nor impart "off" tastes or odors.

Developed through more than ten years' research, "Delsterol" has now been proved by years of feeding to some of America's finest flocks. For further information about "Delsterol," see your feed manufacturer or dealer, or write direct to E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department M.P. 1, Wilmington, Del.

LOOK
for the words
"D"-ACTIVATED ANIMAL STEROL
(VITAMIN D)
on poultry feed bags or tags

DU PONT
DELSTEROL*
(VITAMIN D)

***DELSTEROL**—Du Pont's registered trade mark for its "D"-Activated Animal Sterol**

FOWL TYPHOID

By Dr. H. M. DeVolt, Department of Animal Pathology, University of Maryland

Fowl typhoid is the cause of serious losses in poultry flocks throughout the state and nation. The disease has been encountered chiefly in chickens but also affects other domesticated and semi-domesticated fowls. In addition, it has been found in some wild birds. The ailment is separate and distinct from typhoid fever of man.

The disease is spread by myriads of the causative germs, Eberthella sanguinaria, which are voided in the droppings of affected individuals. Healthy chickens take the typhoid germs into the system with contaminated feed and water. Also the malady may be carried on chicken crates, various utensils, the hands and clothing of attendants, insects and other vectors. Transmission of the ailment through the egg has been suggested.

Typhoid has increased in prevalence during recent months and has been particularly troublesome in the broiler industry.

The ailment occurs in two forms. These are the chronic and acute types of the disease. In the chronic or slow form, the fowl harbors causative germs in the body, discharges them in the droppings and possibly in other ways, and spreads the disease to healthy fowls. Such a typhoid carrier usually shows little outward evidence of ill health. In the acute or rapid form of the malady, the fowl begins to sicken in three or four days after taking the germs into the body. The bird becomes listless, droops, and soon is unable to stand. Usually a greenish yellow diarrhoea is present. The stricken fowl soon passes into a coma and succumbs to the disease in a few hours or days. Recovery does not occur as a rule. The mortality rate often is high.

The internal changes vary with the form of the disease. In the chronic type, the ailment tends to be confined to certain parts of the body such as the intestine or other organs. It has been found in the ovary. In the acute type, typhoid germs are present in the blood stream and are scattered throughout the internal organs. The liver is usually enlarged and easily torn. It may be filled with irregular hemorrhagic spots. More commonly, perhaps, there are greyish white spots on the liver and heart. The heart sac may be distended with fluid. The intestines may be inflammed but quite often are pale and bloodless.

In the control of fowl typhoid, sanitation is of prime importance. The isolation of sick fowls, the maintenance of clean feed and water containers, and the removal of germ-infested litter all tend to combat the spread of the disease. In addition, the agglutination blood test, followed by the elimination of reactors, has been employed successfully in adult fowls to stamp out the disease. It cannot be stated, however, on the basis of present information, that a blood test is equally effective in growing fowls. Investigations of the typhoid control problem are being carried out by various institutions at the present time.

REDUCE DEATH LOSSES
from TRACHEITIS and FOWL POX

with VINELAND VACCINES

Vaccinating against those twin profit destroyers — Tracheitis and Fowl Pox — is an essential part of any sound program to reduce poultry mortality.

PURITY AND POTENCY PROTECTED

by Propagating in Eggs
Sealing in Vacuum

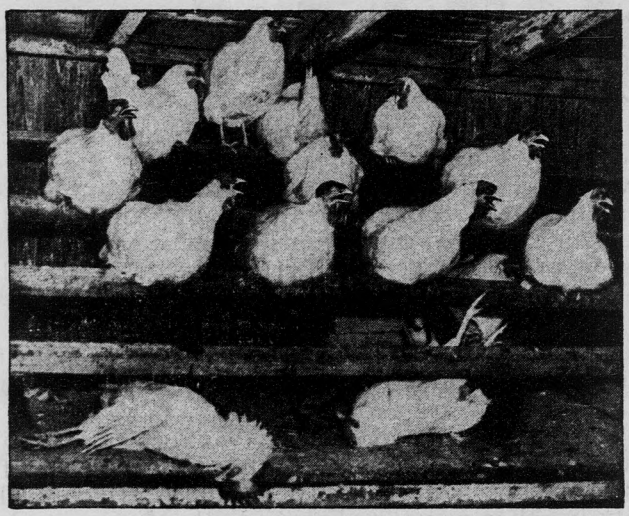
Vineland Vaccines are grown inside of eggs under the supervision of the men who originally developed these vaccines. They are then vacuum - sealed in ampoules by a process developed in our own laboratories. Thus prepared, Vineland Vaccines are potent, surer and safer to use. Because of their demonstrated purity and potency, Vineland Vaccines are used regularly by

55% of all the R.O.P. Breeders of America

50% of the official Egg-Laying Contests of the United States

125 State and Federal Institutions

Our winged cross trade-mark, shown below, appears on all our labels and wrappers. Read carefully the dosages on the labels. Poultry disease workers agree that the dosages we prescribe are essential to PERMANENT IMMUNITY. Be satisfied with nothing less!



These birds are suffering from an acute attack of Infectious Laryngotracheitis. Two have succumbed and others are gasping for breath. Losses up to 70% from acute attacks of Tracheitis are not unusual, yet such losses may easily be prevented through vaccination with Vineland Laryngotracheitis Vaccine.

VINELAND TRACHEITIS VACCINE

Recommended for routine vaccination of young birds, six weeks or older, also for emergency vaccination of laying flocks.

VINELAND FOWL POX VACCINE

Recommended for the routine vaccination of young birds. It may be administered at the same handling as the Tracheitis Vaccine.

VINELAND PIGEON POX VACCINE

Recommended for emergency vaccination of laying flocks where Fowl Pox in threatened.

VINELAND STAINED ANTIGEN
T.G. Formula — Rapid Whole Blood Method

A precision product, tested for accuracy by two independent laboratories, then retested in our own laboratory.

FREE — Handbook on Disease Control. Write for your copy

Our Vaccines are produced under U.S. Veterinary License No. 196, issued by U.S. Department of Agriculture. They may be obtained from dealers, poultry cooperatives or direct from us.

VINELAND POULTRY LABORATORIES

Arthur D. Goldhaft, V.M.D., Director

BOX 70-MS **VINELAND, NEW JERSEY**

LOOK FOR THIS NAME AND THIS TRADEMARK

VINELAND VACCINES

MARYLAND PULLORUM TESTING PROGRAM

By Dr. Charles R. Davis, State Live Stock Sanitary Service, College Park

An official testing program for pullorum was inaugurated in Maryland in 1927. Three flocks were tested and a 20% infection found. The number of flocks and birds tested has steadily increased until during the past season there were 942,694 tested in 2,304 flocks, with a 2.8% infection rate found. This great increase in testing is due to several reasons, namely:—(1) The establishment of branch laboratories by the Live Stock Sanitary Service in Salisbury, Centreville, and Baltimore, in addition to the main laboratory at College Park, making testing facilities more accessible to the poultry industry; (2) The recognition of the plate test; (3) Educational programs regarding pullorum and other poultry diseases.

While the number of tests so greatly increased, the rate of infection has dropped from 20% in 1927 to 2.8% in 1943-44. This is largely due to (1) More retesting of infected flocks; (2) Many flock owners purchasing chicks from pullorum clean sources.

In the past, the Maryland Poultry Improvement Board set a maximum rate of tolerance in flocks before being recognized as officially tested, all flocks exceeding the maximum rate being retested until the percentage of infection was below the maximum allowed.

These percentages of maximum tolerance were lowered as fast as the M.P.I.B. felt it was practical to do so, and funds were available for free retesting of these flocks by the Live Stock Sanitary Service. This has required the retesting of many flocks each year, but has helped greatly in lowering the percentage of infection to the low point found last season.

The average infection rate for tested flocks in the State has been reduced to the point where it is desirable now to change the regulations to get Pullorum-Clean flocks and hatcheries. This step is necessary, if the poultrymen of Maryland wish to hold their trade against other states, where so many now have a large percentage of Pullorum-Clean flocks and hatcheries.

Beginning January 1, 1945, the following regulations regarding flock and hatchery classifications have been adopted by the Maryland Poultry Improvement Board: No hatchery under the supervision of the Maryland Poultry Improvement Board shall accept hatching eggs from a flock until said flock has met or exceeded the classification applied for by said hatchery. Example:—(A) A hatchery that applies for a "Pullorum-Passed" rating shall accept eggs only from flocks that have a Pullorum-Passed or a Pullorum-Clean rating; (B) A "Pullorum-Clean" hatchery shall accept eggs only from flocks that have a Pullorum-Clean rating.

Any one wishing copies of the new Rules and Regulations pertaining to the charges, free retesting, and flock and hatchery classifications of the Maryland Pullorum Testing Program, or seeking information on any poultry disease matters, may get same from any one of the Live Stock Sanitary Service Laboratories located at—College Park, Centreville, and Salisbury.

Preferred *for* Profits

ARCADY

Complete
BROILER RATION

Profit-minded poultrymen prefer Arcady Complete Broiler Ration. They've found that its controlled BALANCE of all needed proteins, vitamins and minerals helps them get fast growth, full development, and premium quality.

Try Arcady Complete Broiler Ration! Then the check from your next shipment will prove what we mean by low feed costs, rapid growth and final PROFITS!

Get a supply from your local Arcady Dealer!

ARCADY FARMS MILLING Co.
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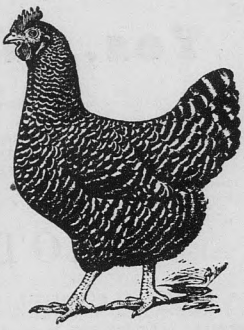
ARCADY FEEDS
TRADE MARK REG. U.S. PAT. OFF.

GOVE BARRED ROCKS



THE PERFECT CHOICE For MEAT OR EGGS

Nearly a quarter century of careful breeding and management and rigid selection, has naturally resulted in a superior bird. Gove Barred Rocks have all the desirable traits — low mortality, vigor, growth, feathering, early maturity, body size, etc. They are especially noted as heavy consistent producers of large size eggs.

GOVE BARRED ROCK BREEDERS ARE N.H. - U.S. PULLORUM CLEAN

George C. Gove

Gove Barred Rocks are very popular with broiler raisers. Their quick growth, feathering and solid meat make them an exceptional strain for broilers. Write for picture catalog — describes Gove's breeding program. Address Box MP.

WRITE FOR THIS CATALOG

GEORGE C. GOVE, Raymond, N.H.

Yes, We Have CAROTENE

Do your feeds contain Carotene? Of course they do. Who ever heard of a commercial mixed feed that does not? But do your feeds contain enough Carotene? Probably not, unless you make a point of it, through actual fortification with Carotene. Alfalfa meal and yellow corn are good sources but Carrot Oil is the richest, and there are still plenty of carrots, raised right here on American farms. And did you know that the Carotene of Carrot Oil is a far superior source of Vitamin A activity than fish oils? In fact, there is no better source of Vitamin A than the

CAROTENE of CARROT OIL

the rich red oil of carrots, and it costs less in the long run, because of its remarkable stability and high nutritional value. Carrot Oil contains the secret of the well known health value of carrots. Following is a list of concentrates used to put these carrot Vitamin values into feeds, and we guarantee any one of them

WILL GIVE YOUR FEEDS A NUTRITIONAL LIFT

1. **Quintrex Carotene in Oil.** A liquid oil containing 1,500,000 Vitamin A units of Carotene per pound. This oil is so potent that one 55-gallon drum contains all the Vitamin A activity present in a 32,400-lb car of fresh garden carrots, having the Vitamin A content given by Eddy & Dalldorf (page 317, The Avitaminoses).
2. **Carex for Feeds.** A dry meal containing 150,000 Vitamin A units of Carotene per pound.
3. **Super Carex.** A dry meal containing 250,000 Vitamin A units of Carotene per pound.
4. **Caradee.** Same description as No. 2 with chick tested Vitamin D added at the rate of 180 and 400 units per gram.
5. **Super Caradee.** Same description as No. 3, with chick tested Vitamin D added at the rate of 180 and 400 units per gram.
6. **Carayed.** Same description as No. 2, with USP tested Vitamin D added at the rate of 220, 440 and 1,100 units per gram.
7. **Super Carayed.** Same description as No. 3, with USP tested Vitamin D added at the rate of 220, 440 and 1100 units per gram.
8. **XX GroVite Concentrate.** A dry complete Vitamin and Trace Mineral Concentrate.
9. **GroVite 32% Supplement.** A dry complete Vitamin and Trace Mienral Supplement.
10. **Special GroVite High in Vitamin B1.** A dry complete Vitamin and Trace Mineral supplement.

Applications of the Products Listed at the Left

No. 1, 2, & 3. For the Vitamin A enrichment of all feeds.

No. 4 & 5. For the Vitamin A & D enrichment of all poultry feeds.

No. 6 & 7. For the Vitamin A & D enrichment of dairy feeds, calf meals, dog foods, fur foods, hog feeds, and the feeds of other four-footed animals.

No. 8 & 9. For the complete Vitamin enrichment of poultry feeds, with the addition of trace minerals, thus replacing cod liver oil, dried milk, yeast, wheat germ oil, and trace minerals.

No. 10. For the complete Vitamin and Trace Mineral enrichment of dog foods, fur foods, dairy feeds, calf meals, hog feeds, and the feeds of other four-footed animals.

Note:—The Vitamin values of these Carotene concentrates are guaranteed 100% available, absorbable and digestible, which accounts for their exceptional ability to give feeds a nutritional lift.

Write for further information and prices on any product in which you may be interested.

CHICADEE

DRY FORM OF "D"-ACTIVATED ANIMAL STEROL

The most popular potency of CHICADEE "D"-Activated Animal Sterol is 2000 AOAC Vitamin D units per gram, or 908,000 units per pound. Potencies of 1000 and 4000 chick units per gram are also available. Because of the very high potencies involved, the sale of CHICADEE is restricted to feed manuafcturers. Besides the well known advantages inherent in "D"-Activated Animal Sterol as a Source of Vitamin D for all poultry feeds, CHICADEE has the additional advantage of a dry base made up of 100% carrot oil meal, and a fat content of 10 per cent.

Write for further information and prices.

NUTRITIONAL RESEARCH ASSOCIATES, Inc.

Manufacturers of Nutritionally Dependable Vitamin Products

255 BROAD STREET **SOUTH WHITLEY, INDIANA**

BUYING GOOD QUALITY CHICKS IS GOOD INVESTMENT

When you go to place an order for chicks next spring, think of the returns you hope to get from the pullets raised and buy the best bred chicks available regardless of price. Paying a relatively high price for good quality chicks is a good investment because it pays good dividends. Pullets raised from good quality chicks will lay better than pullets raised from poor quality, low-priced chicks.

Up-to-date poultry breeders interested in producing the highest possible quality of chicks practice progeny testing in selecting their breeding stock from year to year. Progeny testing is simply selecting breeders on the basis of the kind of progeny they produced. That is the soundest kind of a breeding program that can be carried on. Chicks produced by tested breeders are among the best that can be bought. Look at the results in the following table and decide for yourself which kind of chicks paid the biggest dividends.

Showing Superior Results by Laying Stock Secured From Breeders Procticing Progeny Testing Over Laying Stock Secured From Breeders Not Practicing Progeny Testing, 1937-40 (L. D. Sanborn, California).

Factors	Chicks secured from breeders practicing progeny testing	Chicks secured from breeders not practicing progeny testing
Number of poultrymen	40	82
Average Price, day-old chicks, cents	15.7	11.6
Yearly average fall egg production per bird	47.6	40.7
Per cent laying flock culled yearly	47.6	59.0
Per cent mortality, yearly	20.5	23.2
Yearly average egg production per bird	175.9	156.0
Yearly average net income per bird	$1.39	$1.01

Purchasing chicks of superior quality is always a good investment. The table shows that stock secured from poultry breeders practicing progeny testing was superior to stock secured from poultry breeders not practicing progeny testing in the following respects: (1) Better fall egg production, when egg prices are relatively high; (2) less culling of the laying flock; (3) lower mortality; (4) higher yearly average egg production per bird. All these factors combined resulted in a much better income being secured from the pullets of progeny-tested stock than from pullets of nonprogeny-tested stock.

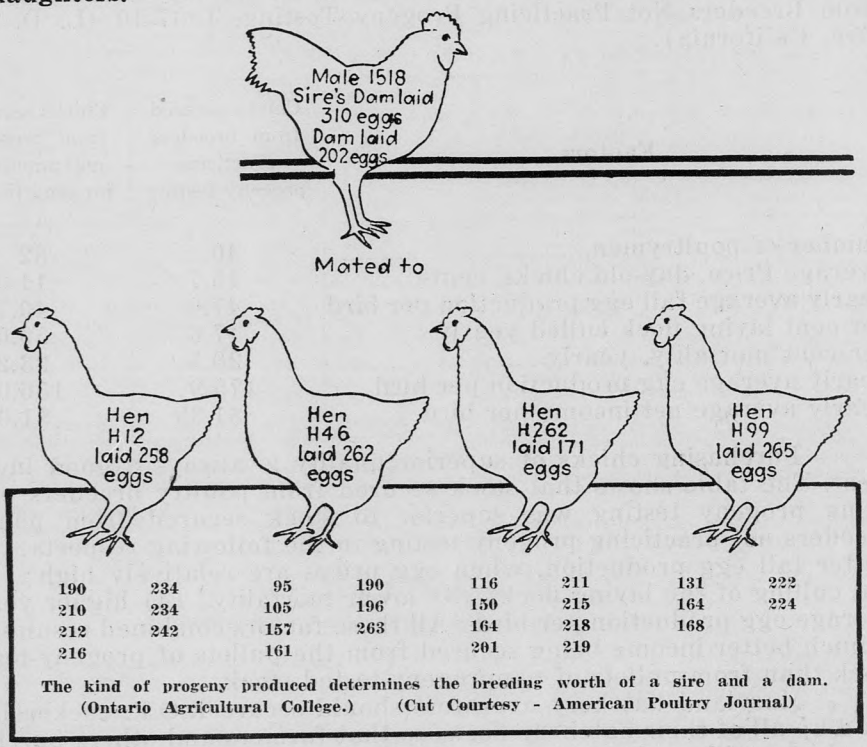
Maryland hatchery operators should secure R.O.P. cockerels to head up all of their hatchery flocks so that farmers and others purchasing chicks will get better egg production out of the pullets raised.

Daily Water Consumption of Growing Chickens—Too many poultrymen do not give their growing chickens enough water. Here is the amount they need daily per 100: first week, 4 quarts; second, third, and fourth weeks, 2 gallons; fourth and sixth weeks, 3 gallons; tenth week, 4 gallons. Lack of water will do more harm than an insufficient supply of feed.

BREEDING WORTH DETERMINED BY DAUGHTERS' PRODUCTION

By MORLEY A. JULL, University of Maryland

Over a period of years, many breeders have learned several things that have proved to be of great value to them in the selection of breeding stock. They have learned that individual records of egg production are of relatively little value in determining a female's breeding ability. In other words, a bird that laid 210 eggs during her first laying year may prove to be just as good a breeder as a bird that laid 310 eggs. Breeders have also learned that the records of egg production of the dam and grandams of a male of a female are limited value in determining the breeding worth of the male or the female. On the other hand, breeders have learned that the breeding worth of a male or a female is determined to a considerable extent by the egg production of its daughters.



The kind of progeny produced determines the breeding worth of a sire and a dam. (Ontario Agricultural College.) (Cut Courtesy - American Poultry Journal)

In the chart shown here, are given the records of egg production of the daughters of 4 dams mated to the same male, number 1518. The sire's dam laid 202 eggs during her first laying year, and the sire's paternal granddam laid 310 eggs during her first laying year.

Hen number H 12 laid 258 eggs and produced 7 daughters
Hen number H 46 laid 262 eggs and also produced 7 daughters.

Hen number H 262 laid 171 eggs and produced 8 daughters.

Hen number H 99 laid 265 eggs and produced 5 daughters.

It is apparent from the records of egg production of the 4 groups of daughters that hen number H 12 was the best breeder. With one exception, each of her daughters laid over 200 eggs, the average egg production of the family of 7 being almost 220 eggs. On the other hand, hen number H 46 had only one daughter that laid over 200 eggs, and the average of her family of 7 was about 169 eggs. It is interesting to note that in the family of 8 daughters of hen number 262 which laid only 171 eggs, 5 daughters laid over 200 eggs, whereas in the family of 5 daughters of hen number H 99, which laid 265 eggs, only 2 daughters laid over 200 eggs.

In selecting future breeding stock from among these 4 families of daughters, the entire family of hen number H 12 would be the best choice. As a matter of fact, the 190-egg daughter of H 12 would probably prove to be a better breeder than the 263-egg daughter of hen number H 46. Cockerels for future breeding purposes should be chosen from among the male progeny of hen number H 12.

The selection of breeding stock based on the performance of the progeny is called the "progeny-test" method of breeding. Hen number H 12 mated to male number 1518 proved to be a good breeder and should be saved for breeding purposes another year. Hen number H 46 proved to be a poor breeder and should be discarded. It would be well not to use any of her progeny for breeding purposes. Hens number H 262 and H 99 proved to be only fairly good breeders, and none of their cockerels should be used as breeders. Male number 1518 proved to be only a fairly good sire and should not be kept for another year unless he could be mated to a few superior females similar to H 12.

Cockerels are used in large numbers for breeding purposes. It is important, therefore, to be able to select cockerels that will improve the egg-laying ability of the flock. A great deal can be accomplished in this direction by selecting cockerels that are full brothers of sisters which have given every indication of being good producers up to the time the cockerels are to be selected.

SCIENCE AIDS THE POULTRYMAN

Phosphorus Requirements of Growing Turkeys—As the result of tests made by Hammond, McClure, and Kellogg of the Beltsville Research Center, Beltsville, Maryland, it was concluded that diets containing 0.6 per cent of phosphorus is sufficient to promote normal growth in poults.

Holding Hatching Eggs in High Humidity Beneficial—W. T. Cooney of the Oregon Experiment Station has recently shown that holding hatching eggs in a relatively high humidity from 4 to 14 days prior to incubation increased hatchability about 5 percent over hatching eggs held for the same period at ordinary humidity.

Sunflower Seed For Poultry—According to work done at the Ontario Agricultural College, Canada sunflower seed oil meal could adequately replace part or all of the soybean oil meal, or part of the meat meal, or part of the fish meal in laying and breeding diets. At the Cambridge School of Agriculture in England, sunflower seeds were found to be a satisfactory substitute for cereal grains in diets fed layers. Sunflower seeds are quite digestible and produce more energy than cereals on an equal weight basis.

Sulfur And Coccidiosis—Texas Experiment Station results indicate that sulfur used extensively in controlling coccidiosis, interferes with normal nutrition if growing chickens are strictly confined and are reared in the absence of sunlight. Under such conditions, chickens require four times as much vitamin D carrier as chickens fed no sulfur. Chickens fed sulfur did well when allowed two hours of direct sunlight distributed over a week's time.

Corn Gluten Protein Good—Corn **gluten** feed is a suitable vegetable protein supplement as a substitute for part of the meat meal in diets for growing chickens, according to results secured at the Ontario Agricultural College. Best results were secured when the diet contained about 10 per cent gluten feed, although as much as 16 per cent could be used.

Two New Vitamin B Units Needed by Chickens—Recent research work at Wisconsin Experiment Station by Dr. G. M. Briggs, C. H. Elvehjem, T. D. Luskey, and E. B. Hart demonstrated the existense of two hitherto unknown vitamins of the B complex. They are at present known as B-10 and B-11 but some day will undoubtedly have real names of their own depending upon their chemical nature. Vitamin B-10 is necessary for normal feather production in the chick, since its absence from the diet causes the feathers to become brittle and fall off within about four weeks. Vitamin B-11 is necessary for proper chick growth, since its absence from the diet causes the chicken to stop growing at about three weeks of age.

SHELL QUALITY IN RELATION TO VITAMIN D

According the work done at the State of Washington Agricultural Experiment Station by Evans, Carver, and Wilhelm, 270 A.O.A.C. chick units of vitamin D per pound of diet is sufficient to maintain production and egg shell quality in white Leghorn pullets kept in confinement.

BETTER BROILER CHICKS BY SELECTING BREEDING COCKERELS EARLY

By Hollis Shomo, Supervisor, Dept. of Markets, Virginia

(Editor's Note—In this interesting article Mr. Shomo tells how quality in Virginia broilers has been improved by early selection of breeding cockerels to be used in flocks producing eggs for hatcheries.)

The selection of breeding cockerels should begin at an early age. In the heavier breeds - broiler varieties - breeding cockerels should be selected at what is commonly known as the broiler age - 8 to 12 weeks. It is very important that each male be an outstanding individual in every respect at this age. To develop superior broiler-producing strains it would seem very important that males heading breeding flocks be selected for their outstanding individual characteristics between the ages of 8 and 12 weeks. The five outstanding objectives in the selection of breeding cockerels are: (1) constitutional vigor; (2) size and condition; (3) sexual maturity; (4) early feathering; (5) freedom from serious breed and variety defects. It is a known fact that many cockerels that are undesirable from a market standpoint when 8 to 12 weeks of age will later develop into desirable looking birds. Too many males of this kind are retained for breeding purposes and continue to produce their kind - chicks that the broiler grower or the market doesn't want. The Virginia Poultry Standardization Plan places emphasis on the selection of outstanding breeding males at an early age. When the final selection of the males is made at maturity the inspector need not concern himself about how they looked at the broiler age. He will know.

Virginia was one of the first states to realize the value of selecting breeding males at an early age. It was the first state to incorporate into its program the official selection of a large number of males at an early age. Mass selection of breeding males has been done in the State for five years. The results of this work are very outstanding and is especially noticeable in the quality of broiler chicks. It is estimated that hatcheries who have been participating in the cockerel selection program regularly are producing chicks today that will average to weigh one-half pound more at 12 weeks of age than the chicks of five years ago. The chicks are much more uniform in size and all are fully feathered when sold as broilers. Fewer males are needed in the breeding flocks when everyone of them is a vigorous individual.

Each year now our poultry inspectors are selecting from 20,000 to 25,000 breeding cockerels between the ages of 8 and 12 weeks. It is estimated that flock owners who have learned how to select males for breeding purposes are adding another 15,000 to 20,000 that they themselves select. From this reservoir of fine birds is drawn the breeding sires that head the flocks participating in the Plan.

As has been said, **definite progress has** been made in improving the growth and feathering of our broiler chicks. We are convinced too that the use of more vigorous breeding males has likewise been the means of increasing the production of eggs.

INTERESTING THINGS TO KNOW

Corn distillers dried grains with solubles can be used to a considerable extent as a substitute for dried skim milk as a source of riboflavin, according to J. C. Bauerfeind and C. S. Boruff of Hiram Walker and Sons.

There were no significant differences in weights of different lots of chickens fed 3, 6, 9 and 12 per cent of alfalfa leaf meal respectively, as a supplement to a diet otherwise low in riboflavin, although the 9 and 12 per cent levels resulted in decreased efficiency of feed utilization, according to T. B. Clark and associates of the West Virginia Experiment Station.

Results secured by F. B. Headley at the Nevada Experiment Station showed that at 30 weeks the average dressed weight of Bronze Turkeys was 19.8 pounds, Black Turkeys 15.4 pounds, and White Holland 12.0 pounds. Feed consumption per pound of gain was: Bronze 4.4 pounds, Black 4.8 pounds, and White Holland, 5.3 pounds.

At the Pennsylvania Experiment Station it was found that low wattage bulbs are as just as effective as high wattage bulbs in stimulating egg production during the fall and winter months by artificial lighting, there, the expense of lighting is reduced.

If hatching eggs are not cooled promptly in warm weather, the thick white breaks down and hatchability is lowered. At the Michigan Experiment Station, E. B. Henderson found that eggs showing the least mobility when candled gave a 73 percent hatch whereas eggs showing the greatest mobility gave a 62 percent hatch. Gather hatching eggs frequently and store them in a temperature of about 55 degrees F with high relative humidity, about 60 percent.

At the Maryland Experiment Station it was found that dehydrated pea vines were more palatable than alfalfa meal for chickens. Chickens fed a diet to which 5 per cent of dehydrated pea vines was added were about one-quarter of a pound heavier at 9 weeks of age than chickens fed the same diet plus 5 per cent of alfalfa meal .Efficiency of feed utilization was the same in both groups of chickens but the group fed dehydrated pea vines grew faster because more feed was consumed.

SELLING PULLORUM-INFECTED CHICKS OR POULTS IS A MISDEMEANOR

A regulation approved by hatchery operators in the State of Washington makes it a misdeameanor to sell pullorum-infected chicks or poults. That is the the State of Washington's way of reducing pullorum infection to the minimum.

Pullorum-Passed or Pullorum-Clean flocks and hatcheries are the best insurance against traffic in pullorium-infected chicks or poults in Maryland.

POULTRY MASHES USING HOME-GROWN GRAINS

	Starting Mash	Browing Mash	Laying Mash	Breeder Mash
Ground yellow corn	500 lbs.	660 lbs.	550 lbs.	500 lbs.
Ground Oats	200 lbs.	200 lbs.	200 lbs.	200 lbs.
Ground Barley	300 lbs.	300 lbs.	300 lbs.	300 lbs.
Ground Wheat	300 lbs.	300 lbs.	300 lbs.	300 lbs.
Soybean oil meal	200 lbs.	200 lbs.	240 lbs.	200 lbs.
Alfalfa leaf meal	100 lbs.	100 lbs.	100 lbs.	100 lbs.
Meat scrap (50% protein)	150 lbs.	80 lbs.	150 lbs.	150 lbs.
Fish meal (Steam or vacuum dried)	100 lbs.	80 lbs.	80 lbs.	150 lbs.
Dried skimmilk	150 lbs.	80 lbs.	80 lbs.	150 lbs.
Vitamin A & D Feeding Oil (400 units D per gram)	4 lbs.	4 lbs.	6 lbs.	8 lbs.
Ground limestone or oyster shell	20 lbs.	10 lbs.	25 lbs.	25 lbs.
Bone meal	— lbs.	20 lbs.	40 lbs.	40 lbs.
Salt	10 lbs.	15 lbs.	15 lbs.	15 lbs.
Manganese sulphate	¼ lbs.	¼ lbs.	— lbs.	¼ lbs.

The Starting Mash is to be fed as an all-mash ration to young chicks. Growing pullets may be changed from the Starting Mash to the Growing Mash at 4 to 6 weeks of age. At the same time small amounts of scratch grain may be fed. The amount of scratch grain should then be gradually increased so that at about 15 weeks of age the birds are consuming about equal quantities of mash and grain. When large amounts of grain are fed in addition to the mash, limestone grit or oyster shell should be supplied in hoppers.

For laying pullets and hens, equal amounts by weight of laying mash and grain should be fed. Limestone grit or oyster shell should be supplied in hoppers.

HIGH LAYING-FLOCK MORTALITY IS VERY COSTLY

By MORLEY A. JULL, University of Maryland

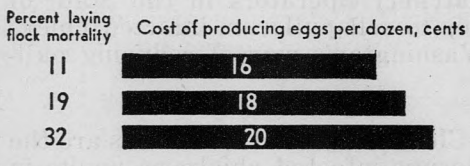


Fig. 1. Among 276 farm flocks in Michigan it was found that the higher the mortality among the layers, the greater the cost of producing each dozen eggs. (From K. T. Wright, Mich, Exp. Sta.)

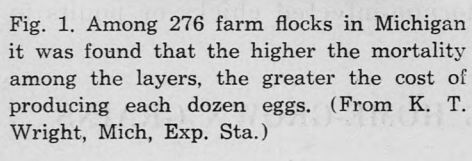


Fig. 2. Among 66 farm flocks in Illinois it was found that between the group of flocks having the least mortility and the group of flocks having the highest mortality there was a difference of 56 cents in returns per bird. (From data of Wilcox, Colegrove, and Alp, Ill, Agr. College)

Average yearly Egg production per bird	Average number of pounds of feed consumed per bird	Average feed cost per bird	Average per cent mortality	Average labor income per bird
111	97	$1.45	29	$0.70
147	105	1.83	20.5	1.30
185	109	2.18	16	2.23

Table 1. Labor income per bird in relation to average yearly egg production per bird. Minnesota Flocks. 10 years (Cora Cooke, Minnesota Extension Service)

—Cuts courtesy of Poultry Tribune

Low net returns in market egg production are frequently the result of high laying-flock mortality, one of the besetting sins of the poultry industry. Dead birds lay no eggs and add nothing more in income except in fertilizer value. High laying-flock mortality means relatively fewer eggs produced on the feed consumed.

Figure 1 shows that as the laying-flock mortality increased, the cost of producing eggs increased.

Figure 2 shows that laying-flock mortality is very often sufficiently high to result in a loss to flock-owners. The high cost of lay-flock mortality is effectively demonstrated in these two illustrations and the moral they portray for flock-owners is to purchase chicks from hatchery operators who secure breeding stock from breeders who breed for resistance to disease. Breeding for resistance to disease is complicated but progress is possible and the effort is very much worthwhile. Of course, the daily care given the flock and sound flock management practices employed have much to do in keeping losses from mortality to the minimum.

Finally, Table 1 shows that over a 10-year period, the higher the level of egg production, the lower the laying-flock mortality and the higher the average labor income per bird. It is worthy of particular note that the higher the level of egg production the lower the mortality.

The two outstanding factors affecting profits in market egg production are the level of egg production secured and the amount of mortality that occurs in the laying flock. Well bred cockerels from bred-to-lay strains that also have been bred for resistance to disease represent the surest way that hatchery operators can hope to produce chicks that will increase the profits of market egg producers. If hatchery operators do their part, farmers and commercial poultrymen will be able to produce more eggs with less feed and thereby increase their profits.

VALUABLE SUGGESTIONS FOR TURKEY GROWERS

Securing Good Fertility In Turkey Hatching Eggs—Results secured at Pennsylvania State College demonstrate that females should be artifically lighted at least three weeks before eggs are wanted as early as the middle of December. In order to secure good fertility during December, the toms should be lighted three weeks before the hens are lighted. For good fertility during January, the toms should be lighted two weeks before the hens are lighted. For good February fertility, the toms should be lighted one week before the hens are lighted. Maryland turkey growers should be able to develop a good market for early hatching eggs.

Turkey Egg Weight and Hatchability—Experimental work carried on the Kentucky College Agriculture demonstrated that turkey eggs weighing between 71 and 98 grams give better hatchability than smaller and larger sized eggs.

Stability of Carotene—Carotene is much more stable in grass silage than in dehydrated grass or alfalfa meal according to work at the Kansas Experiment Station. Growing turkeys fed ample supplies of green feed ate 12 pounds less grain and mash than growing turkeys raised on bare yards without green feed. Pullets reared on green pasture laid better and their eggs hatched better than eggs laid by pullets reared on bare yards.

Vegetable Protein Diets for Turkeys—Workers at the Beltsville Research Center, Beltsville, Md., have demonstrated that simple vegetable protein diets in which soybean meal was the chief protein supplement in the growing mash, produced as large turkeys on as little feed as did the control diet which contained dried skim milk, meat scrap, and fish meal.

Vitamin D Requirement of Turkey Poults—The result of recently conducted research at the California Experiment Station by T. D. Sanford and T. H. Jukes show that the vitamin D requirement for poults was about 200A.O.A.C. units of reference cod liver oil No. 2 U.S.P. Low levels of vitamin D in the diet produced a relatively large number of 4-week poults with crooked breast bones.

Protein Concentrates in Turkey Diets Affect Meat Quality—At the Wyoming Experiment Station recent research by M. V. North has shown that corn gluten meal produced a yellow color in the dressed carcass and the cooked flesh was juicer than when soybean meal or cottonseed meal were used as protein concentrates in the diet. Dried skim milk produced a less intense aroma of the breast meat than corn gluten meal.

BREED POPULARITY IN MARYLAND IN 1943

Of all of the chickens raised in Maryland in 1943, the percentages by breed or variety were as follows: New Hampshire 27, White Leghorn 22, Barred Plymouth Rock 20, Crosses 14, Mixed 10, Rhode Island Reds 4, White Plymouth Rock 3.

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ARE RATS RESPONSIBLE FOR OUTBREAKS OF PULLORUM AND TYPHOID?

A few rats eat a lot of chicken feed, destroy feed bags and damage poultry houses. Nevertheless, many poultrymen do very little to get rid of the filthy creatures. Not only do rats consume a lot of feed, as much as $25 worth of feed per year in a 100-bird laying house, but they contaminate feed hoppers and water containers. Word has recently been received that they are sometimes responsible for outbreaks of pullorum and typhoid diseases in poultry flocks.

THE POULTRYMAN LOOKS AHEAD TO THE POSTWAR PERIOD

By Geo. D. Quigley — University of Maryland

The rapid expansion of the producing poultry industry during the war years has been a source of amazement and pride to all who are connected with it. Total egg production in the United States has increased 40 per cent since 1940, and the number of layers on farms has climbed approximately 32 per cent. The lowly hen has even increased her rate of output. For instance, in September 1944, the rate of lay was 6 per cent greater than the same month in 1940. Commercial broiler production has been stepped up 103 per cent since 1940. The American hen has worked round the clock for a glorious contribution to the war effort, under difficulties at times quite intense, and with wavering governmental support.

The wise poultryman, however, will turn his mind to the future and endeavor to foresee a few of the problems and responsibilities which are likely to confront him during the balance of hostilities, and during the immediate post war period to follow. He remembers quite vividly the glut of springtime eggs during early 1944, when in some instances eggs could not be moved at any price and a surplus of 5,000-000 cases was acquired by the Federal Government. He also recalls periods in the early fall of the same year when city receivers refused to accept broilers under any circumstances, and several million backed up on Eastern farms for want of buyers. These things are probably only forerunners of conditions to come if the poultryman does not organize his own affairs to take time by the forelock.

The termination of the war and the post-war support plan may find many Midwestern states with enormous hen populations, and it is possible, — even likely, that more distant, quality producers will again be competing in Eastern markets. Perhaps competing broiler areas will again flourish in the corn belt. Many of these competitors will have the benefit of lower feed costs than the Maryland producer. The one consistent advantage enjoyed by the Maryland and other Eastern producer is nearness to markets which will pay a premium for quality products, as the strictly fresh market egg or the well fleshed, fresh-killed broiler. The overall program which every producer in Maryland should have in mind is the improvement of his production efficiency, and the marketing of a better egg or a better broiler or turkey. In some instances this will demand new marketing organizations geared to the new job and the new objective to secure for the producer the benefit of orderly marketing processes. All organizations having the newer viewpoint will be in a position to reward and encourage the conscientious producer. Mr. Quantity will be something of a back number and Miss Quality will step into the spotlight.

Along with better production control and preservation of premium market quality we must do a better job of selling. The potential rewards are tremendous. An expanded sales program could accomplish wonders moving troublesome postwar surpluses and the job should be started at once. For example, the 1942 population of the United States was 133,965,000 people. If by means of an expanded sales program, the average consumption of eggs could be increased by one-fifth of one egg per person per day, the country would continue to absorb all of the egg production of our wartime flocks.

Fortunately, the poultry industry already has an excellent organization promoting the sale of eggs and poultry in the Poultry and Egg National Board, Chicago, Ill. under the capable management of Homer Huntington assisted by Cathryn Belle Niles, food specialist. This organization has done much effective work in a promotional way with broadsides, radio, etc. but its staff and facilities should be greatly augmented. The egg is the most versatile of all foods, and is the richest natural food in most vitamins. Poultry meat is delicious and nutritious. As poultrymen we have been too much inclined to allow our marvelous products to shift for themselves in the competitive food market. We must vigorously and more earnestly support our own Fresh Egg Law and our promotional and sales department as the work of Homer Huntington and associates. A glance at the accompanying chart will show that egg consumption follows too closely our national income, also how far we have to go before we achieve a goal of 365 eggs per person per year. In view of the wonderful things we have learned of the nutritive value of eggs since 1927, we should never allow egg consumption to slip as during the years, 1927-1935.

ERADICTING PULLORUM DISEASE

Last year the Utah State Legislature passed a bill by unanimous vote to combat pullorum disease. This legislation was sponsored by the Utah Hatchers and Breeders Association, Utah Turkey Federation, Utah Poultry Producers Cooperative Association, and the Utah State Poultry Council. All hatcheries operating in Utah and hatcheries outside of Utah who sell chicks or poults to Utah poultrymen are licensed and are required to furnish certified copies of pullorum-testing reports with the State Board of Agriculture. The cost of the license is $10.00 and each hatchery, sales agency, and salesman is required to secure one. This progressive legislation has done a lot to curtail the distribution of chicks and poults secured from flocks that either were not pullorum-tested at all or were not state officially tested. This is an effective way of combatting traffic in pullorum-infected chicks and poults.

On the average, eggs approximating standard market size of 2 ounces each or 24 ounces per dozen hatch better than smaller eggs and considerably better than much larger eggs.

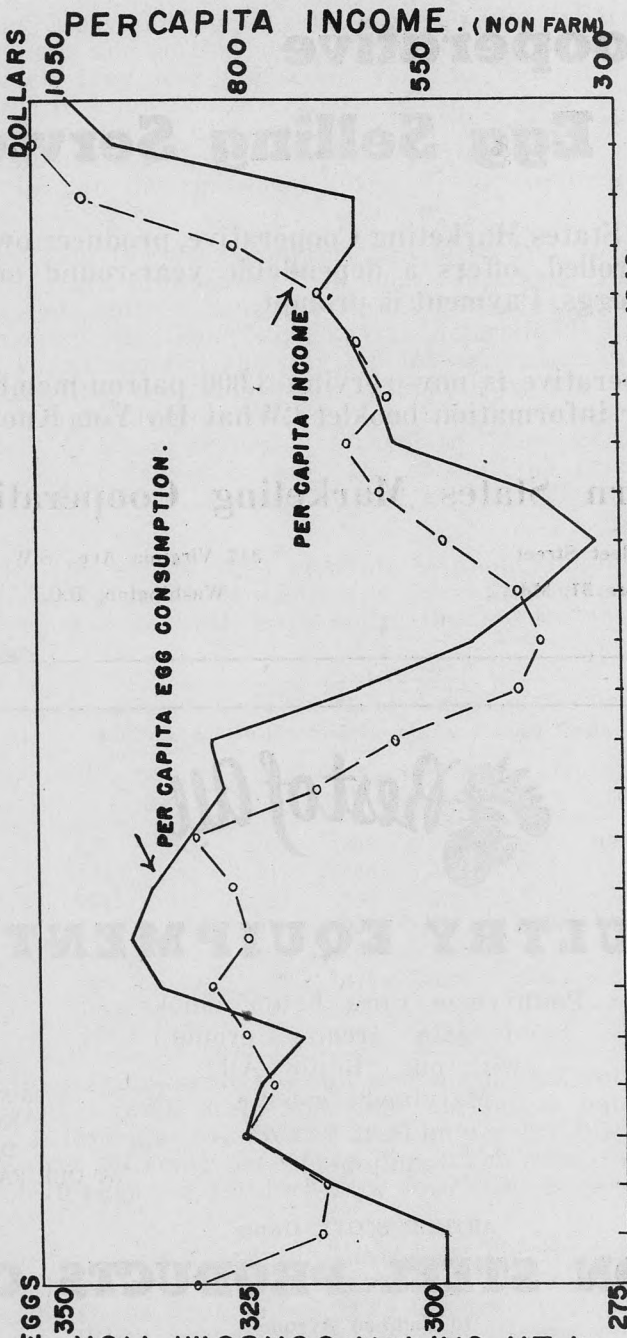

Fig 1. Per Capita Egg Consumption and Per Capita Income, U. S. 1920-1944. It will be observed how closely egg consumption follows national income, also how egg consumption has surprised all records. (1944)

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WHAT DOES IT COST YOU TO PRODUCE EGGS?

Many Maryland poultrymen have no idea what it costs them to produce eggs and so they don't know how much money they make or how much they lose from one year to the other. Every flock owner ought to know, however, how much it costs to produce eggs. It is an easy matter to find out how much it costs if the flock owner knows the number of birds in the flock and counts the eggs produced. From this he can determine the level of egg production or percent production.

Supposing the flock contains 150 birds and 75 eggs are laid; that is 50 percent production. A flock containing 1250 birds and laying 450 eggs daily is laying at the level of 450x100 divide by 1250 or 36 percent production. Now, having determined the percent production in your flock and knowing the cost of scratch grain and mash, then by consulting the table below, prepared by Roy E. Jones of the Connecticut Agricultural College, you can determine the feed cost to produce a dozen eggs at any time of the year. Scratch grain and mash are usually fed in equal parts, so add the price of each per 100 pounds and divide the sum by 2 to get the price of feed per 100 pounds.

Since the cost of feed amounts to about one-half of the total cost of producing eggs. Multiply any figure in the table that applies to your flock and you will have approximately the total cost of producing eggs.

Feed Cost (Scratch, Grain and Mash) to Produce One Dozen Eggs At Different Production Levels And Feed Costs

Per Cent Production	Feed Cost Per 100 Pounds								
	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00
10	.624	.702	.780	.858	.936	1.014	1.092	1.170	1.248
20	.324	.365	.405	.446	.486	.527	.567	.608	.647
30	.224	.252	.280	.308	.336	.364	.392	.420	.448
40	.174	.1958	.218	.2393	.261	.2828	.305	.3263	.348
50	.144	.162	.180	.198	.216	.234	.252	.270	.288
60	.124	.140	.155	.171	.186	.202	.217	.233	.248
70	.1097	.1234	.1371	.1509	.1646	.1783	.1920	.2057	.2194
80	.099	.1114	.1237	.1361	.1484	.1608	.1731	.1855	.1978

Suppose your scratch grain and mash cost you $3.25 per 100 pounds, when scratch grain and mash are fed in equal parts. When your flock is laying at the rate of 30 eggs per 100 birds, the feed cost is a little over 36 cents per dozen, but when your flock is laying at the rate of 70 eggs per 100 birds, the feed costs is only about 18 cents per dozen.

The figures in this table show very clearly the importance of securing a high level of egg production. The higher the feed cost, the better must the flock lay to keep the feed cost per dozen as low as possible. When you determine your total costs of egg production and know the price you receive for eggs, you then know whether you are making or losing money.

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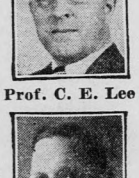
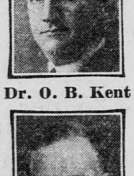


Prof. C. E. Lee



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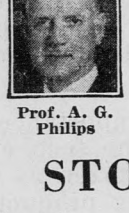

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DRESSED POULTRY MORE ECONOMICAL TO MARKET

Live poultry is decreasing and dressed poultry is increasing in receipts at the principal markets. Shipment of live poultry involves shipment of the waste products resulting from dressing in addition to the heavy weight shrinkage of live as compared to dressed poultry shipping. Moreover, dressing operations can be performed cheaper in the rural areas of production than in cities where higher labor, overhead, taxes and other cost factors prevail. Selling poultry dressed rather than alive produces greater returns for this labor. The trend to dressed poultry started before the war and seems likely to continue during the post-war period—W. H. Rice

BREEDING COUNTS IN BROILERS TOO

As periods of plentiful supplies of broilers arrive, especially during the post-war period, broiler growers, hatcherymen and breeders must give increased attention to the breeding of better broilers. In this program, close selection for rapid growth, fast feathering, compact conformation and heavy fleshing will play a dominant part. However, progeny testing of breeding stock to produce superior strains of chickens for broiler production will be necessary to secure the most efficent broiler breeding flocks. Some of the more progressive breeders are already giving attention to this type of breeding program.—W. H. Rice

AVOID TURKEY BREEDERS WITH POOR BALANCE

Turkey breeders in selecting Broad-breasted or the improved meat type breeding birds will do well to select birds with fairly erect carriage and not too short legs. In a natural position, the shoulders just back of the neck should be the highest point of the back, which should curve downward to the tail.

In handling the birds the keel should be fairly long and about parallel to the back. The keel should be long enough to extend well back between the thighs when the bird is on it's back and legs are pulled backward. The breast meat should be well distributed to the rear of the keel and not be confined principally to the front of the breast. Birds of this type usually are free of the forward tilt carriage usually seen in birds of rather short keel and heavy forward fleshing of breast with decidedly less fleshing on rear of keel.

Both observation of the birds on their feet and careful handling on a table are necessary to do a good selecting job.—W. H. Rice

VITAMIN A REQUIREMENTS OF CHICKS

At the University of Connecticut Dr. E .Jungherr found from a study of the condition of the tissues in the nasal passages of growing chicks that during the first six weeks the minimum requirement of vitamin A was approximately 300 International Units per bird per day. Chickens 7½ months old needed a minimum of approximately 400 International Units per bird per day. It was also found that vitamin A storage capacity of chickens increased after two months of age and relatively greater storage occured in feeding comparable doses of vitamin A from cod liver oil than from carotene in oil.

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Reflect for a moment what it means to run a business continuously for 118 years . . . through many panics . . . depressions . . . and wars, without going on the rocks at any time. Luck and good fortune have been with us . . . we have always had very capable and broadminded business men at the head of our organization, and today, our house is capably managed by the second and third generations of the Hunters and Waltons, with the assistance of other partners, bright and active young men who were formerly employees of the firm. We have always been fortunate in having loyal and capable employees, and perhaps we hold the record for employee permanence.

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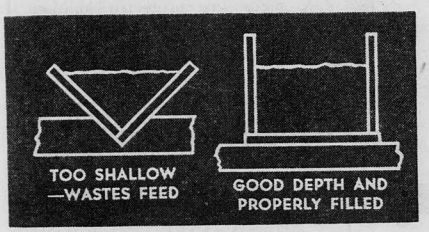
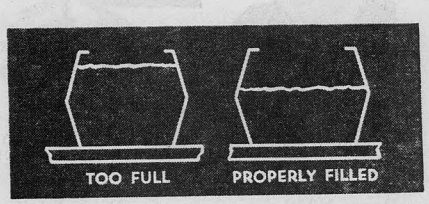
PROVIDE PLENTY OF HOPPER SPACE BUT DON'T WASTE MASH

Laying mashes are best fed in open-type hoppers, but on most farms too much feed is wasted. Feed freshly ground mashes regularly but don't fill the hopper too full. A flock in heavy lay will eat a little more mash than scratch grain, so it's your job to stir the mash left in the hopper every time you go through the house and when necessary add fresh mash so that the hopper is never over two-thirds full. For each 5 layers provide one lineal foot of hopper space or for 100 layers provide two hoppers each 5 feet long. Arrange the hoppers in the laying house so that about the same amount of lighting reaches each side of the hopper. Birds will consume more mash if they can eat from the hoppers while standing on the floor but don't build your hoppers so low that litter and filth will be scratched into them. Put a reel across the top to keep the birds from getting their feet into the hopper. —M. A. Jull



Good design of feeders is necessary to keep feed from being billed "out."

Cuts courtesy Everybody's Poultry Magazine.)



Overfilling of feeders causes much waste of feed. You can save by not filling the feeders over two-thirds.

WATER SHORTAGE DECREASES EGG PRODUCTION

Dry water pans or fountains will decrease egg production quicker than insufficient feed. The daily requirements for each 100 layers are about 6 gallons, allowing for some wastage. Two 3-gallon containers are better than one 6-gallon container. Keep the containers in strictly sanitary condition at all times, because filthy water tends to spread disease.

SOURCE OF VITAMIN D IMPORTANT FOR TURKEYS

Vitamin D from cod liver oil and sardine oil is much less effective in preventing rickets in turkey poults than similar amounts of the same vitamin from irradiated animal sterols. When using fish oil products, approximately 900 A.O.A.C. chick units per pound of mash are necessary, while only 450 units from irradiated animal sterols are adequate, R. V. Boucher reports from Pennsylvania State College.

Application of this information will prevent nutritional failure which accompanies attempts to raise turkeys on too little vitamin D from fish oil sources and will reduce the waste resulting from supplying an overabundance of this vitamin from irradiated animal sterols.

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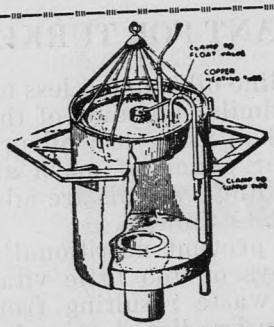

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BROILERS OR LAYERS OR BOTH?

It is sometimes difficult for one to decide if it is best for him to devote his farm and facilities exclusively to layers or broilers, or a combintion of the two. Examples of successful operations are much more plentiful of exclusive layer or broiler plants than of a combination of the two. Difficulties in planning the regular management schedule in the combination seems to be the principal difficulty where both enterprises are followed. Then too, the problem of introduction of disease is much greater where both enterprises are followed. There is also a tendency on such farms to handle the growing pullets in much the same manner as commercial broilers are brooded and grown. This type of management seldom produces really good pullets and breeders, while mature stock on the premises are always a potential source of disease infection to broiler chicks brooded throughout the year.

Many producers now carrying both layers and broilers would doubtless do a better job and realize greater profits by specializing in one of the two enterprises to the exclusion of the other—W. H. Rice.

SELLING MD. DRESSED TURKEYS COOPERATIVELY

The best way for Maryland turkey growers to get the best price for their turkeys would be to develop cooperative dressing establishments and pay each producer according to the number of turkeys that qualify for each grade. A turkey grower most of whose turkeys qualified for Grade A would certainly get a better price than another turkey grower most of whose turkeys qualified for Grade C. This system would be the best possible incentive for turkey growers to develop a turkey with better body type and better fleshing ability. Maryland growers should consider developing cooperative dressing plants as a post-war project.

GRAIN WITH MASH HELPS KEEP BROODER LITTER DRY

At Pennsylvania State College it was found that grain and mash feeding of baby chicks resulted in a much better litter condition than all mash feeding, E. W. Callenbach reports. Both Single Comb White Leghorns and Barred Plymouth Rocks were used in these tests which were conducted in cold weather in colony houses. The chicks were brooded with electric brooders.

The evidence suggests that the variation in litter condition was due in a large measure to physical or perhaps chemical differences in feed intake and not to scratching activities resulting from feeding grain in the litter. Feeding chick-size grain only during the first two days of brooding was very helpful in controlling "pasting-up" of chicks of fair quality. No effect of this kind was noted with good quality chicks.

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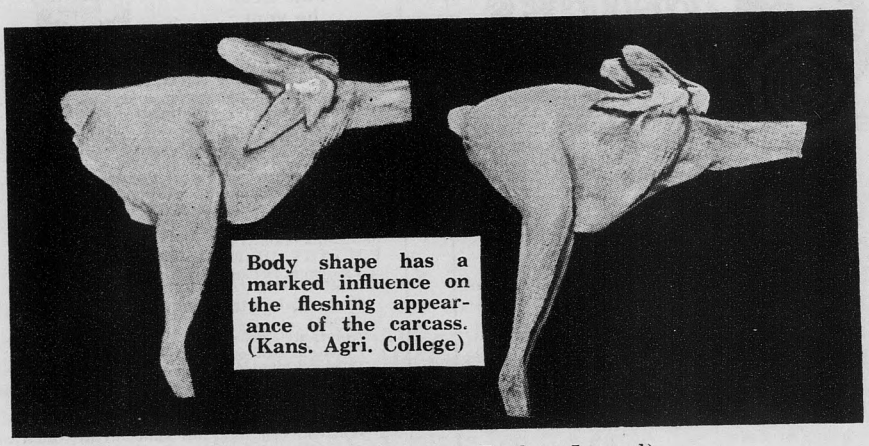
BREEDERS PRODUCING BROILER HATCHING EGGS SHOULD SELECT FOR BODY SHAPE IN BREEDING STOCK

All flocks of broilers show entirely too much variability in body shape and fleshing ability. That is true of broilers secured from eggs produced by the leading poultry breeders in the Northeast as well as in Maryland. As a matter of fact, most breeders who produce broiler hatching eggs have paid little attention to the selection of breeding stock on the basis of body type. This seems very strange because it is well known that body shape has a marked influence on the fleshing appearance of the carcass.

Breeders who produce broiler hatching eggs should select birds for breeding with good width and fair depth of body, good length of keel running parallel with the back, and fair length of shank. If Maryland dressed broilers and fryers are going to make high grades in the future, the breeders must pay much more attention to the selection of breeding stock that will produce a superior type of broiler and fryer.



Body shape has a marked influence on the fleshing appearance of the carcass. (Kans. Agri. College)

(Cut courtesy American Poultry Journal)

RIGID SANATION LOWERS LOSSES OF TURKEY POULTS

Mortality of turkey poults on the Pennsylvania Experiment Station farm has been sharply reduced through the efforts of P. H. Margolf and W. T. S. Thorp. In 1938, 31.7 percent died during the first 4 weeks. In 1942 the death loss during the first 9 weeks was 12.9 per cent, and in 1943 it was further reduced to 4.9 percent.

Management practices contributing to this reduction include: (1) more careful attention to clean nests and dry litter on the floors of breeding pens; (2) more rigid sanitation especially in the reduction of moist areas on the floors of brooder houses during the brooding period. (3) using only the progeny of the best producing birds showing a high percentage of hatchable eggs and good livability of their off-spring; and (4) provision of a separate incubator for turkey eggs. This sanitation program has reduced the incidence of coliform and paracolon organisms isolated from dead birds.

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BROILER PRODUCERS SHOULD PAY MORE ATTENTION TO BODY SHAPE AND FLESHING

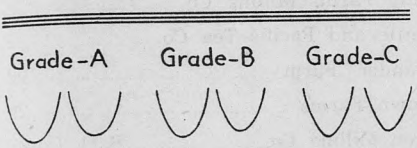

Chart for grading male and female chickens for fleshing over the breast during the growing season. For each grade, the breast of the male is shown at the left and the breast of each female is shown at the right. As chickens reach maturity, the breasts naturally tend to become plumper. —Cut courtesy American Poultry Journal.

Greater uniformity of body type and better fleshing ability are needed in most flocks. One objection to so many birds in most flocks is that they have too long shanks. Birds with relatively short shanks, good width over the back, medium depth of body, and fair length of keel tend to make the best looking dressed birds when prepared for market.

At about 5 weeks of age, the birds should be examined for body shape and those with relatively short shanks, broad bodies, and straight keels should be toe punched or banded so they will be kept as breeders. Another selection should be made when the birds are about 12 weeks of age, birds above the average weight of the flock and with relatively short shanks and broad bodies being saved as breeders, especially cockerels. About three times as many cockerels should be kept as will be needed eventually because defects may appear in some of them before the breeding season is at hand.

All of the birds in the flock should be examined carefully for fleshing, especially over the breast and legs. These parts constitute about 40 per cent of the live weight and about forty-five per cent of the dressed weight of 3-lb. fryers. Dressed birds with plump, well-fleshed breasts are preferred by consumers. The degree of fleshing is influenced of course, by diet and management during the growing season, but fleshing ability is inherited so that birds fed the same diet and managed the same always differ a great deal in the degree of fleshing attained at marketing time. Since fleshing ability is inherited, it is important for the flock owner to keep for breeding purposes the best fleshed birds. Grading the birds, especially the males, into A, B, and C, grades on the basis of plumpness of breast, as indicated in an accompanying chart, would be helpful. Birds qualifying for grade A are the only ones that should be kept for breeders, providing there are enough of them.

Body type is important because it affects the appearance of the dressed bird. At marketing time, live birds to be kept as breeders should have relatively short shanks but good body weight, which is influenced by the width over the back, the anterior depth of the body, and length of the keel. Birds with very narrow and excessively deep bodies should not be kept for breeding. Fair anterior body depth and a fairly long keel tend to give the birds a well finished appearance when dressed for market, providing there is an abundance of fleshing over the breast and throughout the length of the keel. The keel should be approximately parallel with the back and, of course, should be straight.—M. A. Jull

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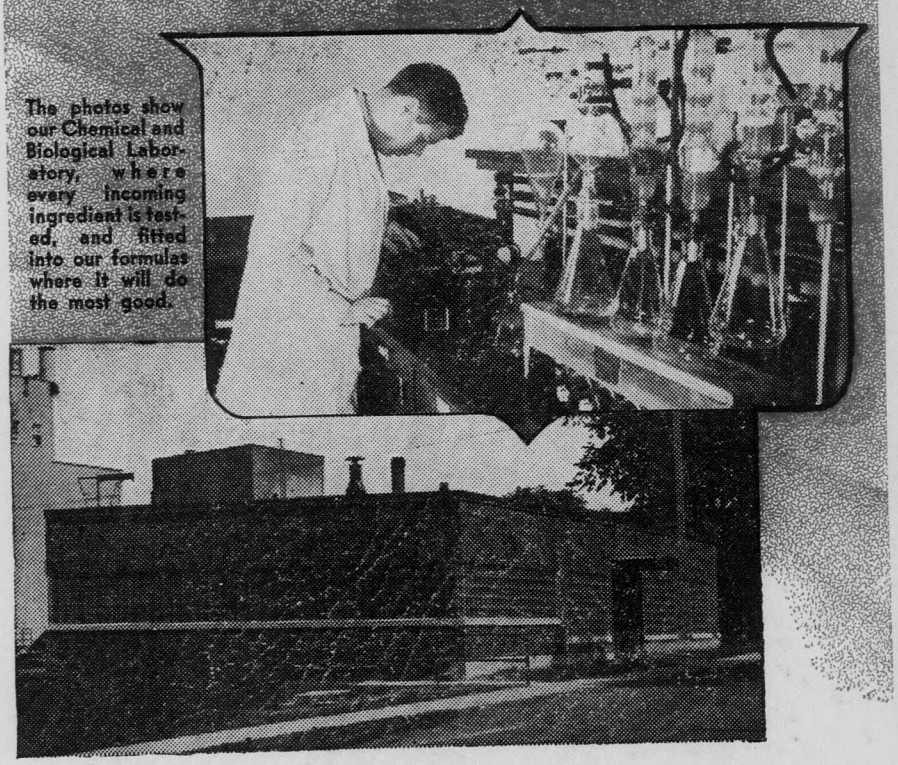

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